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SOURCE GOST 3276-46,

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USSR STANDARD FOR GOI 54 WATER RESISTANT,
NONFREEZING LUBRICANT UVM (GOST 3276-46)

(Petroleum Industry B 24)

1. This standard applies to the lubricant designed for lubricating air navigation and optical and radio instruments and also control mechanisms of aircraft operating in the temperature range of -60 to +55°C.

2. Composition of the lubricant

Percent by Wt

- a. MVP vaseline oil, in accordance with GOST 1805-42 78±2
b. Ceresin, in accordance with GOST 2488-44, with a melting point not lower than 84°C 22±2

3. The lubricant must fulfill the following physicochemical requirements:

External form and properties: vaseline-like, uniform and emulsive lubricant.

A 1-mm coating of the lubricant on a glass plate, when examined over a light source, must appear uniform and without clots.

Physicochemical Properties	Values	Test Method
1. Penetration (Richardson) at 25°C	225-260	OST NKTP 7872/2292, M.I. 6a-36
2. Drop point (Ubbelohde), not lower than	60°C	OST NKTP 7872/2292, M.I. zh-36

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<u>Physicochemical Properties</u>	<u>Values</u>	<u>Test Method</u>
3. Thermal stability test	Passes	Lubricant must not peel off nor re-lease oil during heating in an oven for 3 days at 55°C
4. Acid number, not more than	0.2 mg KOH/g	In accordance with point 4 of this standard
5. Corrosion test on steel, copper, and aluminum plates, 48 hr at 60°C	Passes	GOST 1037-41
6. Mechanical impurities	None	OST 7872-39, M.I. 19B /3d letter of alphabet/
7. Ash content, not more than	0.2%	OST NKTP 7872/2292, M.I. 26v-36
8. Water content	None	GOST 1044-41

NOTE: 1. Corrosion test (see 5) is carried out (a) on steel plates of grades 40, 45, 50 and similar types (GOST V-1050-41); (b) on copper plates of grades M0, M1, and similar types (GOST V-1019-41); and (c) on aluminum plates of grades A 112 and similar types (GOST 2685-44).

11. In determining ash content (see 7), amount weighed in is 15-20 g.

4. Determination of Acid Number

A 1:4 mixture of 95% alcohol and gasoline is prepared in a flask which has a ground-glass stopper.

Eighty grams of the alcohol-gasoline mixture are brought to a boil under a reflux condenser in an Erlenmeyer flask for 5 min. While still hot the 80 grams are neutralized by 0.1N alcohol solution of potassium hydroxide in the presence of phenolphthalein.

Next, about 2 grams of the lubricant, accurate to 0.01 gram, are introduced into the flask. The mixture is then refined again until the lubricant is completely dissolved and cooled at 50-60°C. Several drops of phenolphthalein are mixed in and the contents of the flask are allowed to stand.

A solution that becomes tinted rose upon standing indicates the presence of free alkali. If the solution does not color while standing, it is titrated while still hot, using 0.1N solution of potassium hydroxide with vigorous stirring, until a faintly rosy tint appears. The acid number is computed according to the formula:

$$x = \frac{VT}{g} \cdot 1000$$

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where: x = acid number of the lubricant;

v = number of milliliters of 0.1 N alcoholic solution of potassium hydroxide used in titration;

T = titration standard of alcohol solution of potassium hydroxide in grams;

g = weighed portion of lubricant, in grams.

5. Packing, storage, transportation, and acceptance of lubricant are carried out according to GOST 1510-45.

6. Selection of samples of lubricant is carried out in accordance with GOST 2517-44. One kilogram of lubricant is set aside for control samples.

Proposed by Ministry of Petroleum Industry of South and West Regions of USSR.

Approved by All-Union Committee on Standards, 21 August 1946.

Effective 1 November 1946.

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